



Shigellosis is widespread globally and particularly common in developing countries and other areas with low standards of hygiene. There are four known species of shigella: *Shigella dysenteriae*, *Sh. boydii*, *Sh. flexneri* and *Sh. sonnei*.

Findings of shigella should be reported by clinical microbiological laboratories to the Department of Bacteriology, Mycology and Parasitology (DBMP) at SSI. Furthermore, shigellosis is individually notifiable on form 1515.

The Department of Epidemiology regularly sends out reminders on the basis of DBMP data to encourage individual notifications.

Notified cases

In the period 2004-2007, a total of 723 cases were recorded via the laboratory notification system. The cases were recorded as 70% *Sh. sonnei*, 22% *Sh. flexneri*, 4% *Sh. boydii*, 2% *Sh. dysenteriae* and 2% not stated, [Table 1](#).

Table 1. Distribution of shigella species 2004-2007

Species	2004	2005	2006	2007	Total
<i>Sh. son.</i>	81	100	46	279	506
<i>Sh. flexn.</i>	35	39	40	43	157
<i>Sh. boydii</i>	10	9	4	4	27
<i>Sh. dys.</i>	6	9	2	1	18
Total	132	157	92	327	708

In the same period, 486 (67%) cases were notified individually, [Figure 1](#). A total of 38% of these cases were notified after up to three reminders. Age distribution, frequency of hospital admission and place of infection are shown in [Table 2](#).

Table 2. Notified shigellosis cases 2004-2007 by age, hospital admission and place of infection

Age (yrs)	Notified	Admitted	Aqc. in DK
0-10	77	22	34
11-20	28	5	4
21-30	90	18	30
31-40	106	14	64
41-50	87	14	44
51-60	68	10	32
61-70	25	4	4
70+	4	2	2
Total	485	89	214

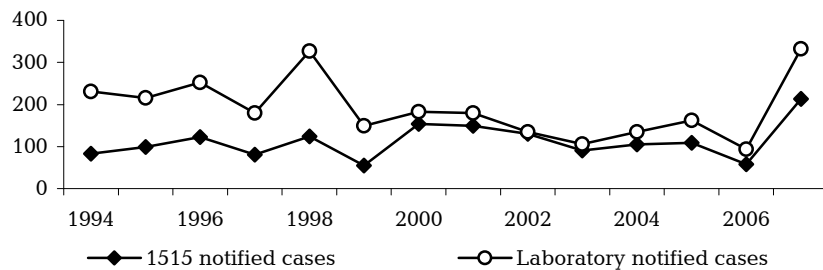
A total of 18% of the notified cases were admitted to hospital.

Outbreaks

In the period 2004-2007, the database of foodborne outbreaks (FBO) recorded three outbreaks, and on the basis of notifications on form 1515,

SHIGELLOSIS 2004-2007

Figure 1. Notified shigellosis cases 1994-2007



27 minor clusters were recorded. Most cases were Danes who had been infected during travels abroad. In 2007, a major *Shigella sonnei* outbreak was caused by baby corn imported from Thailand and distributed to retail outlets and to the canteens of several workplaces. The outbreak ran from 5 to 20 August during which period a total of 140 persons were notified on form 1515. Most of the notified cases were females (74%) residing in Zealand. The median age was 37 years (range 0-92 years). A few cases gave rise to secondary infection of family members or colleagues, EPI-NEWS 35/07. Due to this outbreak, an unusually large proportion (44%) of the individually notified cases was infected in Denmark. The outbreak comprised 65% of all cases infected in Denmark in the period 2004-2007.

In relation to the laboratory notification system, 215 (30%) of all cases in the period and 42% of the *Sh. Sonnei* cases were attributable to the outbreak.

A *Sh. flexneri* outbreak at a clinical microbiology department comprised six employees where the infection had been transmitted from a patient sample.

Transmission during foreign travel

Among the 271 persons who were infected outside of Denmark, 129 (48%) were infected in one of 26 African countries. Among these, 76 were infected in Egypt, including 74 (97%) Danes infected during vacation stays. A further 79 (29%) were infected in one of 17 Asian countries, including 36 (45%) in India, of which 34 (89%) were infected during vacation stays.

Furthermore, 10% were infected in one of 21 Central and South American countries and 8% in one of 12 European countries. In 5% of cases, the country of infection was unknown.

Occupational infection

In the period 2004-2007, eight per-

sons were notified with presumed occupational infection on form 1515, including three who had been infected during a placement abroad, two employees of an asylum centre/refugee camp, one hospital employee, a school teacher and a sanitation worker. Furthermore, as mentioned above, the period saw six cases among the employees of a clinical microbiology department.

Commentary

Shigellosis is extremely infectious and may cause severe infection, particularly in small children and in the elderly.

The occurrence of resistance depends on the subtype, and the country in which the infection is acquired. Outbreaks may occur in families, child-care institutions or in connection with imported foodstuffs, particularly vegetables. After infection, employees of the food industry and food retail outlets as well as employees and children of childcare institutions must comply with a specific set of provisions before resuming their work responsibilities or returning to the institution, EPI-NEWS 10/01. Treatment with antibiotics shortens the course of illness and the period of bacterial excretion. The 2007 increase in the number of Danish cases was caused by the *Sh. sonnei* outbreak from imported baby corn mentioned above, EPI-NEWS 35/07. In 1998 a similar outbreak occurred, which was also caused by imported baby corn, EPI-NEWS 25-33/98 and [Figure 1](#).

The most efficient way to avoid transmission from raw vegetables and fresh herbs imported from exotic origins is to blanch or boil the foods in question. If brief heat treatment is not an option, the vegetables should always be rinsed thoroughly before use.

(C. Kjelsø, H. Lewis, K. Mølbak, Dept. of Epidemiology, S. Ethelberg, DBMP)

Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2008 figures are preliminary)

Table 1	Week 5 2008	Cum. 2008 ¹⁾	Cum. 2007 ¹⁾
AIDS	1	5	5
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	4	2
Diphtheria	0	0	0
Food-borne diseases	7	24	65
of these, infected abroad	0	4	5
Gonorrhoea	8	26	43
Haemorrhagic fever	0	0	0
Hepatitis A	3	7	5
of these, infected abroad	1	2	2
Hepatitis B (acute)	0	0	1
Hepatitis B (chronic)	5	15	25
Hepatitis C (acute)	0	0	1
Hepatitis C (chronic)	6	24	48
HIV	3	21	29
Legionella pneumonia	3	13	12
of these, infected abroad	1	8	2
Leprosy	0	0	0
Leptospirosis	0	0	4
Measles	1	2	0
Meningococcal disease	0	5	5
of these, group B	0	2	0
of these, group C	0	1	4
of these, unspec. + other	0	2	1
Mumps	0	1	1
Neuroborreliosis	2	10	13
Ornithosis	0	1	0
Pertussis (children < 2 years)	1	10	14
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	0	0
Listeria monocytogenes	0	0	4
Streptococcus pneumoniae	4	12	10
Other aethiology	0	8	2
Unknown aethiology	1	3	0
Under registration	3	9	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	2	9	3
of these, infected abroad	1	7	1
Syphilis	1	9	11
Tetanus	0	0	0
Tuberculosis	12	33	33
Typhoid/paratyphoid fever	2	3	1
of these, infected abroad	2	3	1
Typhus exanthematicus	0	0	0
VTEC/HUS	1	11	11
of these, infected abroad	0	1	3

¹⁾ Cumulative number 2008 and in corresponding period 2007

Selected laboratory diagnosed infections

Number of specimens, isolates, and/or notifications received in SSI laboratories

Table 2	Week 5 2008	Cum. 2008 ²⁾	Cum. 2007 ²⁾
Bordetella pertussis (all ages)	0	11	19
Gonococci	8	33	40
of these, females	1	3	6
of these, males	7	30	34
Listeria monocytogenes	0	1	9
Mycoplasma pneumoniae			
Resp. specimens ³⁾	8	22	121
Serum specimens ⁴⁾	3	19	74
Streptococci ⁵⁾			
Group A streptococci	0	18	12
Group B streptococci	5	13	11
Group C streptococci	0	3	1
Group G streptococci	2	17	12
S. pneumoniae	15	168	144
Table 3	Week 3 2008	Cum. 2008 ²⁾	Cum. 2007 ²⁾
MRSA	4	34	-
Pathogenic int. bacteria ⁶⁾			
Campylobacter	23	71	151
S. Enteritidis	6	17	11
S. Typhimurium	7	15	5
Other zoon. salmonella	15	43	30
Yersinia enterocolitica	4	8	15
Verocytotoxin- producing E. coli	2	4	8
Enteropathogenic E. coli	1	6	15
Enterotoxigenic E. coli	1	6	7

²⁾ Cumulative number 2008 and in corresponding period 2007

³⁾ Resp. specimens with positive PCR

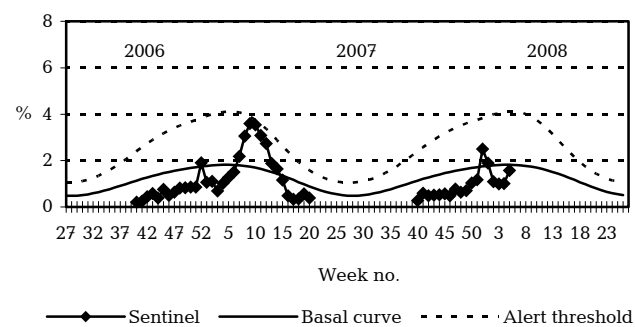
⁴⁾ Serum specimens with pos. complement fixation test

⁵⁾ Isolated in blood or spinal fluid

⁶⁾ See also www.germ.dk

Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 2006/2007/2008



Sentinel: Influenza consultations (as percentage of total consultations)

Basal curve: Expected frequency of consultations under non-epidemic conditions

Alert threshold: Possible incipient epidemic